

## ABSTRACT OF THE DISCLOSURE

A demodulator, chip and method for digitally demodulating an FSK signal utilizing a digital data transfer protocol and a digital demodulator circuit have been developed. The data-rate approaches the carrier-frequency. The one  
5 application for this technique is in the magnetically powered wireless systems such as biomedical implants and radio frequency identification (RFID) tags with high data rates above 1 Mbps. The demodulator circuit extracts the serial data bit-stream and a constant-frequency clock from an FSK carrier signal in the 1~20 MHZ range, which can power the wireless system as well. The digital demodulator circuit is  
10 implemented entirely with digital circuitry and is called a digital-FSK (DFSK) demodulator.